ENGINEERING STANDARD

OAK RIDGE, TENNESSEE

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PIPE SUPPORT SPACING

MAXIMUM SPAN IN FEET

SCHEDULE NUMBER	INSULATION THICKNESS	Nominal Pipe Size, Inches 1/2	3/4	1	1-1/2	2	3	4	6	8	10	12	14	16	18
10S	0"	–	–	14	16	17	20	21	24	26	28	29	–	–	–
	1"	–	–	13	14	15	18	20	23	25	27	29	–	–	–
	1-1/2"	–	–	11	13	14	17	19	22	24	26	28	–	–	–
	2"	–	–	10	12	13	17	18	21	24	26	28	–	–	–
	3"	–	–	8	10	11	15	17	20	23	25	27	–	–	–
20	0"	–	–	–	–	–	–	–	–	30	32	33	36	37	37
	1"	–	–	–	–	–	–	–	–	29	31	32	35	36	37
	1-1/2"	–	–	–	–	–	–	–	–	28	30	31	34	35	36
	2"	–	–	–	–	–	–	–	–	28	30	31	34	35	36
	3"	–	–	–	–	–	–	–	–	27	29	30	33	34	35
30	0"	–	–	–	–	–	–	–	–	31	33	35	37	–	–
	1"	–	–	–	–	–	–	–	–	29	32	34	37	–	–
	1-1/2"	–	–	–	–	–	–	–	–	29	31	34	36	–	–
	2"	–	–	–	–	–	–	–	–	29	31	34	36	–	–
	3"	–	–	–	–	–	–	–	–	27	31	33	35	–	–
40 and 40S	0"	9	11	14	16	18	22	24	28	31	33	35	37	–	–
	1"	8	10	12	15	16	20	23	27	29	32	34	37	–	–
	1-1/2"	7	9	11	14	15	19	22	26	29	31	34	36	–	–
	2"	7	8	10	13	14	19	22	26	29	31	34	36	–	–
	3"	–	–	8	11	13	17	20	25	27	31	33	35	–	–
80	0"	9	11	14	17	19	23	25	30	–	–	–	–	–	–
	1"	8	10	12	15	17	22	24	29	–	–	–	–	–	–
	1-1/2"	7	9	11	14	16	21	23	28	–	–	–	–	–	–
	2"	7	8	10	13	15	21	23	28	–	–	–	–	–	–
	3"	–	–	8	12	14	18	22	27	–	–	–	–	–	–

APPROVED BY	Charles Garren	AUTHOR	

THE MAXIMUM SPANS IN THE TABLE ARE FOR CARBON STEEL AND STAINLESS STEEL PIPE USING A STRESS VALUE(S) OF 12,000 PSI.

FOR PIPE OF OTHER MATERIALS SUCH AS ALUMINUM, COPPER OR OTHER NONFERROUS ALLOYS, THE SPANS MUST BE CALCULATED INSERTING THE PROPER VALUES IN THE FORMULAS ON PAGE 2.

FOR STANDARD WEIGHT PIPE (WALL THICKNESS 0.375 INCHES) IN SIZES 12 INCHWS THROUGH 18 INCHES, USE SPANS FOR THE SCHEDULE NUMBER HAVING A WALL THICKNESS OF 0.375 INCHES OR LESS.

NOTES:

LENGTH OF CALCULATED SPANS HAVE BEEN ROUNDED OFF TO THE NEAREST FOOT.

TABULATED SPANS ARE BASED ON THE FOLLOWING:

UNIFORM LOAD CONSISTS OF WEIGHT OF PIPE FILLED WITH WATER WHEN BARE. THE ADDITIONAL WEIGHT OF INSULATION, HAVING A DENSITY OF 11 IBS. PER CUBIC FOOT, IS ADDED WHEN PIPING IS INSULATED.

EXCESSIVE VIBRATION AND CONCENTRATED LOADS SUCH AS VALVES AND BRANCH LINES ARE NOT TAKEN INTO ACCOUNT. SHORTER SPANS MUST BE USED FOR THESE CONDITIONS.

THE FOLLOWING FORMULAS WERE USED TO COMPUTE THE SPAN:

FORMULA "A"

(MAXIMUM SPAN LIMITED BY STRESS)

$$L = \sqrt{\frac{SZ}{4W}}$$

FORMULA "B"

(MAXIMUM SPAN LIMITED BY DEFLECTION NOT IN EXCESS OF 15% OF PIPE ID)

$$L = .417 \sqrt[4]{\frac{EI(ID)}{W}}$$

WHERE:

L = SPAN, FEET
I = MOMENT OF INERIA, INCHES^4
W = UNIFORM LOAD, LBS PER FOOT
Z = SECTION MODULUS = $\frac{1}{.5(OD)}$ INCHES^3
ID = INSIDE DIAMETER OF PIPE, INCHES
S = STRESS = 12,000 PSI FOR STEEL
E = MODULUS OF ELASTICITY , 25,000,000 PSI FOR STEEL